

## **REMARKS**

Claims 1-30 are pending in this application, all of which stand rejected. Claims 1 and 29 have been rejected under 35 U.S.C. § 112, second paragraph. Claims 1-5, 7-22, and 24-30 have been rejected under 35 U.S.C. § 102(a) as being anticipated by U.S. Patent No. 6,201,176 (Yourlo). Claims 6 and 23 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Yourlo in view of U.S. Published Patent Application No. 2002/0005110 (Pachet). Following entry of the amendment, claims 1, 18, and 29 will have been amended, and claim 9 will have been canceled without prejudice.

For the reasons set forth below, applicants submit that the Office Action overlooks certain features that are present in the claims, but that are not present in the applied references. For these reasons, applicants request that the rejection be reconsidered and withdrawn.

### Section 102 and 103 Rejections

The various claims are not identical in scope, language, or substance. Each claim stands on its own, based on the language used in a particular claim, and nothing stated herein is intended to characterize the claims, or to impart a meaning to the claims different from what would otherwise be understood. However, to assist the Examiner in evaluating this case, applicants will point out those claims that have related features. The following list is a summary of points to be considered in reference to certain claims:

- Accentuating tempo characteristics (relevant to claims 1, 12, 22, 27, and 29)
- Compact representation of music (relevant to claims 1, 22, and 29)
- A level of confidence associated with a value (relevant to claims 8, 17, and 25)
- A vector distance between a bin and a point (relevant to claim 18)
- An octave component (relevant to claim 20)
- Processing of music based on calculating a square root of a sum of squares (relevant to claims 2, 13, 28, and 30)

Applicants discuss below how each of these features defines over the applied references.

Accentuating tempo characteristics

Each of the independent claims (1, 12, 22, 27, and 29) defines features relating to accentuation of tempo characteristics. For example, claim 1 defines: “processing the compact representation [of an input piece of music] to accentuate tempo characteristics.” Claim 12 defines: “accentuating the tempo characteristics of the envelope.” (“The envelope” is defined elsewhere in claim 12, as being created based on a portion of music.) Independent claims 22, 27, and 29 are not identical to claims 1 or 12 in scope, language, or substance; however, these claims define other features relating to accentuation of tempo characteristics. As to these features, the Examiner has cited elements 402 and 404 of Figure 4 of Yourlo.

It should be noted that the independent claims are subject only to an anticipation rejection under section 102, and have not been subject to an obviousness rejection. Nor has any reference other than Yourlo been applied to the independent claims. Thus, the question of whether the section 102 rejection of these claims can be maintained is governed by the standard set forth in MPEP 2131: In order for an anticipation rejection to be upheld, “[t]he identical invention must be shown in as complete detail as is contained in the ... claim.” *Id.* It is clear that neither the cited portion of Yourlo, nor any other portion of that reference, teaches or suggests the feature of accentuating tempo characteristics.

Figure 4 of Yourlo purports to describe a feature extraction process. As explained in col. 5 of Yourlo: “The tempo extraction process 402 operates upon the input piece of music 100 to produce tempo data output 404.” (Col. 5, ll. 19-21.) Thus, the process of Figure 4 is addressed to extraction of features (such as tempo) from a piece of music, but does not discuss the accentuation of any feature. “Tempo extraction process 402” is also shown in Figure 5 of Yourlo, and is further described with reference to that figure (see col. 5, ll. 37-65). That portion of Yourlo is a further explanation of how tempo can be extracted. However, it contains no mention of accentuating the extracted tempo (or any characteristics thereof). Nor does that portion of Yourlo contain any discussion from which accentuation of tempo characteristics could be reasonably inferred. While a dictionary definition is not limiting of the claims, applicants note that one example dictionary (the American Heritage Dictionary of the English Language, 4<sup>th</sup> ed. 2006) defines “accentuate” as follows:

ac·cen·tu·ate ... tr.v. ...

1. To stress or emphasize; intensify: “enacted sweeping land-reform plans that accentuated the already chaotic pattern of landholding” (James Fallows).
2. To pronounce with a stress or accent.
3. To mark with an accent.

While the above quote from a dictionary is merely an example, there is no teaching or suggestion in Yourlo that any accentuation of tempo characteristics, in the sense of the above definition, would take place. Nor has the Examiner proposed any other understanding of “accentuate” that is taught or suggested by the Yourlo reference.

Yourlo clearly does not teach or suggest the feature of accentuating tempo characteristics. Thus, applicants request that the section 102 rejection of independent claims 1, 12, 22, 27, and 29 be reconsidered and withdrawn.

Compact representation of music

Independent claims 1, 22, and 29 each define features relating to a compact representation of music. For example, claim 1 defines “creating a compact representation of [an] input piece of music.” Claims 22 and 29 define related features. As to this feature, the Examiner has relied on element 304 of Figure 3 of Yourlo. That element is labeled “feature extraction” in the Figure 3 drawing, and is described as follows: “... a piece of music 100 is input, and it then undergoes a feature extraction step 304 after which the features undergo a classification step 306 and are stored in a feature database 308.” The applied portion of Yourlo does not discuss creating a compact representation of an input piece of music. Extracting features from music does not create a compact representation of the input piece of music; it merely creates information that describes a particular feature of the music (e.g., a description of the music’s tempo).

This feature is not found in the applied reference, and that fact provides an additional reason why claims 1, 22, and 29 define over that reference. Thus, in addition to the “accentuating” issue discussed above, applicants request for the further reasons explained in this section that the section 102 rejection of claims 1, 22, and 29 be reconsidered and withdrawn.

A level of confidence associated with a value

Dependent claims 8, 17, and 25 define features relating to a level of confidence associated with a value. In particular, claim 8 defines “returning at least one number indicating the level of confidence of [a] tempo properties class assignment.” Claim 17 defines “outputting at least one indication of the level of confidence of [a] tempo properties class assignment.” Claim 25 defines “an indication of the level of confidence associated with [an] estimate [of at least one tempo class associated with the portion of music – see independent claim 22].” These features are not found in the applied reference.

As to this feature, the Examiner cites col. 6, ll. 13-30 of Yourlo. This portion of Yourlo generally discusses how music can be partitioned into “windows” for processing, and concludes: “The optimum selection of window size requires a balance between the accuracy of the resultant representation of the feature, and compression of the data in order to reduce computational burden.” (Col. 6, ll. 27-30.) In other words, in Yourlo there is a tradeoff between size and accuracy, and the Examiner appears to read the cited passage as equating “confidence” with accuracy. Even if one assumes that one might have varying levels of confidence in data depending on how accurately the data has been created, there is no teaching or suggestion in the cited passage that a number indicating what a level of confidence is returned, or that any indication is created or outputted reflecting such a level of confidence. Nor have applicants been able to identify any other portion of Yourlo that teaches or suggests such a feature. The Examiner appears to speculate that one might have a higher level of confidence in accurate data, but this speculation does not amount to a teaching of the claimed feature. In order to maintain an anticipation rejection, the Examiner would have to demonstrate that Yourlo teaches a number or indication that represents a level of confidence in a tempo properties class assignment (claims 8 and 17), or in a tempo class (claim 25).

Yourlo does not teach or suggest a number or indication that represents a level of confidence in a tempo class or tempo properties class assignment. Thus, claims 8, 17, and 25 define features that are not present in Yourlo, and the section 102 rejection of these claims should be reconsidered and withdrawn.

A vector distance between a bin and a point

Dependent claim 18 defines “determining the vector distance between [a] bin and at least one individual point in [a] database.” The Examiner has not addressed this feature, or any other feature of claim 18. Since the Examiner has not set forth any basis to find that claim 18 is anticipated by Yourlo, the anticipation rejection of this claim should be withdrawn.

While the Pachet reference mentioned in the obviousness rejection has not been applied to claim 18, we note that neither Yourlo nor Pachet teaches or suggests determining a vector distance between a bin and a point in a database. Neither reference appears to describe determining any vector distance similar to that defined in claim 18. Therefore, even if the Examiner had addressed the features of claim 18, applicants submit that neither of the references that have been applied to this case teach claim 18’s features.

Thus, applicants request that the section 102 rejection of claim 18 be reconsidered and withdrawn.

An octave component

Dependent claim 20 defines “outputting an octave component.” Claim 20 is subject only to an anticipation rejection over Yourlo, and Yourlo does not teach or suggest the outputting of an octave component, or any other information about a musical octave. A word search of Yourlo reveals that the word “octave” does not appear at all in that reference. (While Pachet has not been applied to claim 20, applicants note that the same word search on Pachet reveals that the word “octave” also is not present in that reference.) Accordingly, neither reference teaches or suggests the features of claim 20.

Accordingly, applicants request that the rejection of claim 20 be reconsidered and withdrawn.

Processing of music based on calculating a square root of a sum of squares

Dependent claims 2, 13, 28, and 30 define features relating to processing of music by calculating a square root of sums of squares. For example, claim 2 defines that the “creating” feature (which is defined in independent claim 1) “includes calculating the square root of the

sum of the squares of blocks of samples of said input piece of music.” Claims 13, 28, and 30 are not identical to claim 2 in either scope, language, or substance, but define related features.

All of these claims have been rejected as anticipated by Yourlo. However, applicants note that Yourlo does not teach or suggest any calculation that is a square root of a sum of squares. In fact, Yourlo does not mention the term “square,” “root,” or “square root.” Pachet has not been applied to claims 2, 13, 28, and 30. However, we note that Pachet also does not mention these terms, except for one mention of a “sum of squared differences” in paragraph 0153. This passing mention of the term “squared differences” does not teach or suggest the feature defined in claims 2, 13, 28, and 30, since it does not describe a square root of a sum of squares.

Thus, applicants submit that claims 2, 13, 28, and 30 are not anticipated by any of the applied references, and request that the section 102 rejection be reconsidered and withdrawn.

**Section 112, second paragraph rejection**

Claims 1 and 29 have been amended. Claim 1 defines outputting of an estimate of the tempo, and claim 29 defines a component that outputs an estimate of a tempo. In view of these amendments, applicants request that the section 112 rejection be reconsidered and withdrawn.

**No new matter**

The amendments to claims 1, 18 and 29 do not introduce new matter. Claims 1 and 18 essentially incorporate the outputting of canceled claim 9, and is thus supported at least by claim 9 and Fig. 6 (at least by element 635) of the original specification.

Claim 18 adds minor punctuation relative to the prior version of that claim, and neither changes the scope or meaning of the claim nor adds new matter.

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**PATENT**

Conclusion

For all of the foregoing reasons, applicants submit that this case is in condition for allowance.

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